

2 Sheets—Sheet 1.

No. 576,930.

Patented Feb. 9, 1897.



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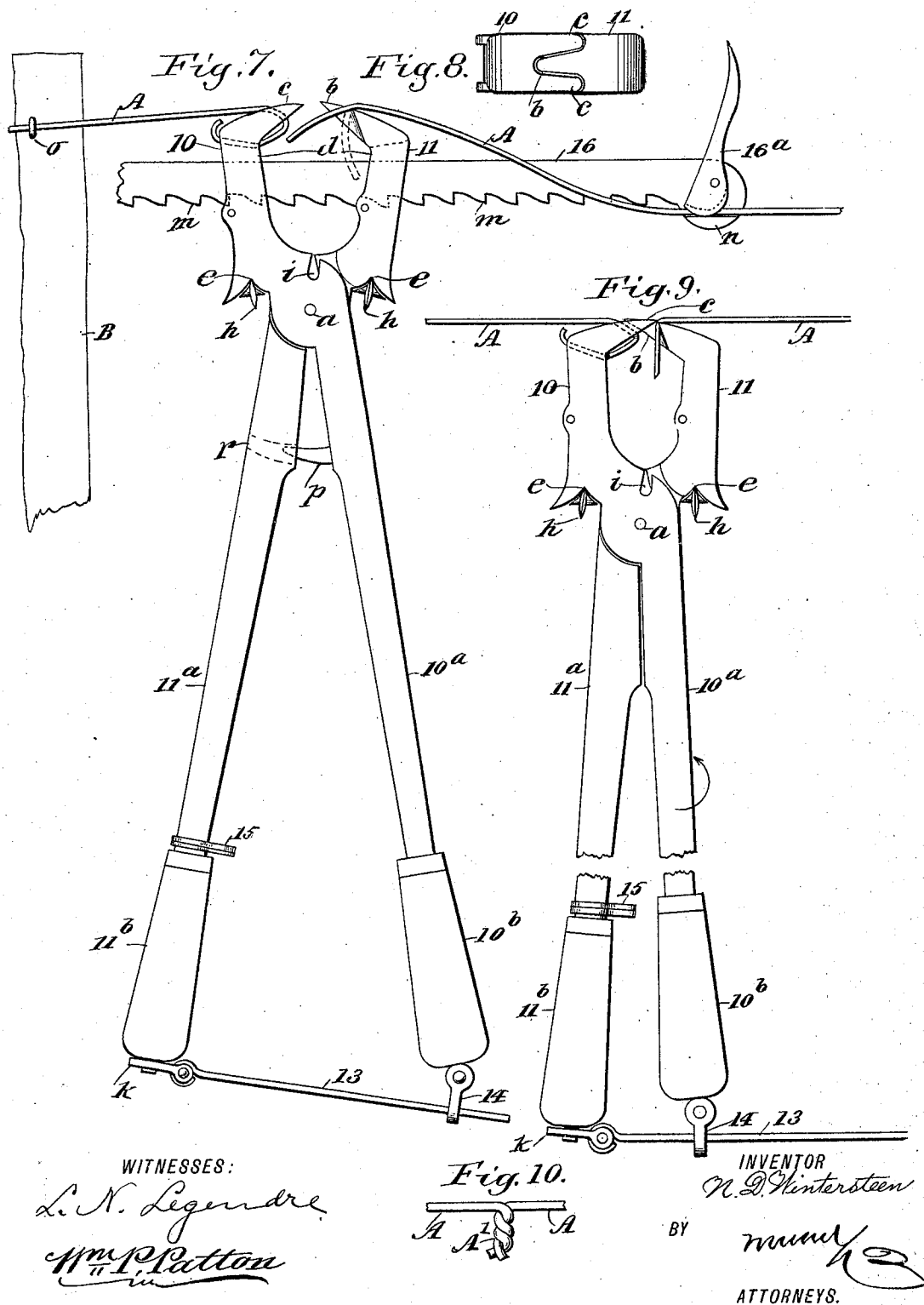
(No Model.)

2 Sheets—Sheet 2.

N. D. WINTERSTEEN.
TOOL FOR ERECTING WIRE FENCES.

No. 576,930.

Patented Feb. 9, 1897.



UNITED STATES PATENT OFFICE.

NORMAN D. WINTERSTEEN, OF DEADWOOD, SOUTH DAKOTA.

TOOL FOR ERECTING WIRE FENCES.

SPECIFICATION forming part of Letters Patent No. 576,930, dated February 9, 1897.

Application filed May 12, 1896. Serial No. 591,214. (No model.)

To all whom it may concern:

Be it known that I, NORMAN D. WINTERSTEEN, of Deadwood, in the county of Lawrence and State of South Dakota, have invented a new and Improved Tool for Erecting Wire Fences, of which the following is a full, clear, and exact description.

This invention relates to a portable tool for facilitating the erection and repair of wire fences, and has for its object to provide a novel and simple device of the indicated character, which will be light and convenient to handle, that will enable the stretching of fence-wires along a line of posts, afford means for stretching and splicing fence-wires while being secured in place, and also facilitate the drawing of staples from posts and the straightening of such drawn staples for reuse.

The invention consists in the novel construction and combination of parts, as is hereinafter described, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a partly-sectional side view of the improvement, one portion being broken away, the device being shown in position for service as applied to stretch and hold a fence-wire while the latter is secured to a fence-post. Fig. 2 is a transverse sectional view of an essential part of the tool and an edge view of other portions of the same, the line of section being indicated at 2 2 in Fig. 1. Fig. 3 is a perspective view of an enlarged end portion of a toothed bar, and of a clamping-dog thereon, designed to hold a fence-wire, shown in dotted lines. Fig. 4 is an enlarged detail view of an end portion of one handle-limb forming part of the improved tool and of a hinged locking-block that is pendent therefrom, seen in direction of arrow 4 in Fig. 1. Fig. 5 is an enlarged side view of adjacent portions of two handle-limbs that are members of the improved tool, said parts being seen in direction of arrow 5 in Fig. 2. Fig. 6 is a transverse sectional view of details shown in Fig. 5 and taken essentially on the line 6 6 in said figure. Fig. 7 is a side view of the improved tool, showing it applied for

splicing a fence-wire and representing the first stage of the operation. Fig. 8 is an end view of the jaws of the improved tool. Fig. 9 is a side view of the tool adjusted to complete the wire-splicing operation, and Fig. 10 is a side view of the wire splice completed and removed from the tool.

The improved wire stretching and splicing tool is provided with two jaws 10 11, that are integrally formed on the handle-arms 10^a 11^a, respectively, these parts being lap-jointed and pivoted together at *a*. The jaws 10 11 have end portions of the same projected toward each other, and on one jaw, 11, a slightly-tapering nose *b* is produced at the transverse center, the other jaw, 10, being furcated to provide two jaw-limbs *c c*, that are suitably sloped toward their free ends on the inner sides, the space intervening between said jaw-limbs being adapted to loosely receive the nose *b* when the jaws 10 11 are in closed adjustment, as clearly shown in Fig. 8.

Between the pivot *a* and bent end portions of the jaws 10 11 longitudinal slots *d* are formed therein, that have side walls parallel with the sides of the jaws. The portions of the jaws 10 11 that intervene between the nose on one jaw, the limbs of the other jaw, and the pivot *a*, that connects both jaws, are sufficiently widened near said pivot to permit the formation of an open recess or cross-chamber *e* in the lower end of each jaw that projects away from the pivot, as shown in Figs. 1, 7, and 9.

Above the cross-channel *e* in the jaw 11 an elongated recess *e'* is formed, which is open on the outer edge of said jaw, as clearly shown in Figs. 1 and 2, and a like recess is produced in the other jaw, which recess is open at the inner edge of said jaw, as is indicated by dotted lines in Fig. 1, the upper ends of both recesses *e'* being merged into the longitudinal slots *d*.

A latch-dog 12 is located in each longitudinal recess *e'*, and at the lower end of each dog, which is in the form of a rectangular block having a sloped upper side, a cylindrical stem *f* is downwardly projected, said stems passing loosely through perforations in the lower walls of the recesses mentioned. On the stems *f* spiral springs *g* are mounted and have their

ends respectively engaged with the lower ends of the dogs 12 and with the lower walls of the recesses *e'*, said springs normally pressing the dogs upwardly and into the slots *d*.

5 On the lower end of each guide-stem *f*, that extends through the lower end of the jaw it is located in, a laterally-projecting finger-piece *h* is loosely secured, the forms of said pieces being shown by full and dotted lines 10 in Fig. 1.

It will be seen that the finger-pieces *h* are each furnished with similar inverted-V-shaped formations at the ends, whereon the depending stems *f* are loosely secured, and that 15 said formations have their angular edges disposed nearest the said stems and in the same direction as the fingers extend, so that when the latter-named parts are turned to extend outwardly from the sides of the jaws 10 11, as shown by full lines in Figs. 7 and 9, the spring-pressed dogs 12 will project up into the slots *d*; and if the finger-pieces are turned into the position indicated by dotted lines in Fig. 1 the dogs 12 will be retracted from said 25 slots, as best represented at the left side of the figure named.

The handle-arms 10^a 11^a are preferably afforded equal length and terminate at their free ends in suitably-shaped handles 10^b 11^b 30 to enable the convenient manipulation of the improved implement when used.

At the upper edges of the flattened joint-leaves, through which the pivot *a* is inserted, similar notches *i* are cut, these having such 35 a width and depth as will permit the free introduction of a strand of fence-wire therein when the handle-arms are positioned to transversely align the notches with each other. The joint-leaves being formed of metal, which 40 may be hardened to take a cutting edge, it will be evident that by a vibration of the handle-arms 10^a 11^a wire that has been inserted within the notches *i* may be cut off smoothly and with ease, on account of the leverage afforded by the comparatively long handle-arms. 45

At the free ends of the handles 10^b 11^b a locking device is placed, which is designed to afford convenient and reliable means for retaining the arms 10^a 11^a at any angle of divergence which may be necessary for the proper service of the implement, said device comprising the following-described parts: On the handle 11^b a holder-rod 13 is loosely 55 secured by a clip-plate *k*, that is swivel-connected to the handle at its extremity by a small bolt or screw.

The holder-rod has a sliding engagement with a locking-block 14, which is hinged to 60 the free end of the handle 10, said block being laterally perforated to permit the free sliding movement of the holder-rod therein. The holder-rod is of suitable length to render it available for locking the handle-arms when 65 they are considerably spread apart, but, if desired, the rod may be removed from the locking-block and be folded at the inner side of

the handle 11^b, it then being gripped between the yielding jaws of a spring-clasp 15, as is shown by dotted lines in Fig. 1.

70 In use when it becomes necessary to lock the handles of the tool and hold them at a desired point of divergence against an opposing strain that tends to spread the arm 10^a 11^a, a manipulation of the locking-block 14, so as to 75 incline it toward the jointed end of the holder-rod 13, as represented in Figs. 1, 7, and 9, will cause the edges of the orifice in the block 14, through which the rod passes, to bite on the latter and retain the arms locked against 80 spreading until the block is vibrated away from the jaw 11 sufficiently to release the rod 13.

A ratchet-toothed bar 16 forms an essential feature of the improvements, and, as shown in 85 Figs. 1 and 7, consists of an elongated straight bar of metal having a cam-faced dog 16^a, pivoted on one side of the same at one end, there being a series of ratchet-teeth *m* formed on an edge of the bar, extending throughout its 90 length and hooking toward the cam-dog thereon.

It will be seen in Fig. 3 that an integral clamping-jaw *n* is laterally formed on the bar 16 and has one face opposed to the rough- 95 ened cam-face of the dog 16^a, so that a rocking movement of the dog in direction of the curved arrow in Fig. 3 will cause the latter to bite upon a fence-wire and hold it firmly against a pull applied to the wire in direction 100 of the straight arrow in the same figure.

The bar 16 from its function is preferably termed a "stretcher-bar," and when applied for use as a medium for drawing a fence-wire taut, which is fastened to a post of the fence 105 and needs stretching toward another post to be secured thereon, said stretcher-bar has its end opposite from the one having the dog on it slid into the slot *d* of the jaw 11, as represented in Fig. 1. The main portion of the 110 bar 16 passes through the slot in the jaw 10 and projects therefrom, and when the implement is applied for service to stretch a fence-wire A the latter is clamped to the bar by the 115 dog 16^a. The jaw 11 of the tool is now located against the side of a post B, toward which the wire is to be drawn and upon which it is to be fastened by a staple *o*, and this jaw is held stationary by the operator grasping the handle 11^b. The latch-dogs 12 120 are now caused to press upwardly by a proper adjustment of the finger-pieces *h*, which will permit the expansion of the springs *g*, and the upper ends of the latch-dogs enter between adjacent teeth of the stretcher-bar, so 125 as to impinge upon shoulders of said teeth when the handle 10^b is vibrated, which will move the bar 16 in the direction of arrow 2 in Fig. 1 and correspondingly stretch the fence-wire A in an obvious manner. When 130 the fence-wire is rendered sufficiently taut, an adjustment of the holder-rod 13 and locking-block 14 is effected for a retention of the handle-arm 10^a in locked connection with the

arm 11^a, as before explained, which will permit the operator to place and drive a staple over the wire A and into the post B, as shown in Fig. 1. After the staple *o* has been driven into the post and caused to clamp the wire A thereon in the usual manner the wire-stretching tool may be removed and the operation repeated at another post in the fence-line on which the wire is to be affixed.

When the two ends of a fence-wire must be connected in a secure manner, so as to adapt the joined pieces for use as a single fence-wire, the improved implement is employed for such a purpose and the operation is as follows: The end of one fence-wire is bent into hook form, and the bight of said looped portion of the wire is placed in the notch of the jaw 10, the short limb of the hook being then passed through the slot *d* of said jaw from the inner side, as clearly shown in Fig. 9. The end of the other wire that is to be connected with the end that is engaged with the jaw 10 is bent near the extremity, so as to permit it to be hooked on the jaw 11 at one side of the nose *b*. The jaws 10 11 are now closed and the nose *b* caused to bear on the bight of the wire that is hooked in the notch of the jaw 10, one of the jaw-limbs thereon pressing upon the other wire portion that is on the jaw 11 in a like manner so that the ends of the separate pieces of wire are clamped in the jaws of the tool. The operator now turns the handle-arms 10^a 11^a so as to give them several rotations, preferably in the direction of the curved arrow in Fig. 9, which will twist the ends of the wire held in the jaws of the tool and firmly unite them together. When released from the tool, the shearing-jaws formed by the notches *i* may be utilized for removing superfluous ends of wire at the twisted connection, when the joint will appear as represented Fig. 10 at A'.

It sometimes becomes necessary to join broken fence-wires that are in place on the fence-posts, which the improved implement is specially well adapted for. To this end one portion of the fence-wire that may be fast on an adjacent post B, as shown in Fig. 7, is hooked into the notch of the jaw 10, passing through the slot *d* of said jaw from the inner side of the same. The stretcher-bar 16 is in this case introduced first through the slot *d* of the jaw 11 and thence through a like slot in the jaw 10 below the hook end of the fence-wire that has been previously placed therein. The clamping-dog 16^a is now caused to bite on the other end portion of the broken fence-wire and hold the main portion of the wire stretched as tightly as the operator can pull it toward the tool. It will be seen that there is a slack portion of the wire projecting from the dog 16^a toward the jaw 10. The operator now vibrates the handle 11^b, so as to actuate the stretcher-bar by successive engagement of the teeth on said bar with the latch-dogs 12, that in effect become pawls for retention of the bar as it is given a step-by-step move-

ment. After the stretcher-bar 16 has been longitudinally moved toward post B, Fig. 7, so as to properly stretch the wire portion clamped on said bar, the portion of said wire that is between the dog 16^a and nose *b* on jaw 11 is bent down, as indicated by dotted lines in Fig. 7, and the jaws of the tool are closed, so as to bind on both of the wire ends, as represented in Fig. 9. The clamping device at the free ends of the handles 10^b 11^b is now adjusted to hold the jaws in closed adjustment, as before explained, and the tool is rotated around its longitudinal axis, which will twist the ends of the wire together and effect a firm connection of the same, the joint appearing, after the excess of wire has been sheared off by the jaws *z*, as is shown in Fig. 10.

In rebuilding a wire fence it is desirable to quickly remove the staples in a manner which will permit their reuse if not too much rusted. The improved fence-building tool is specially adapted for such a purpose, as the nose *b* on jaw 11 may be readily inserted in the loop of the staple, said nose being rounded and beveled at its end to facilitate such an insertion. Now if the jaws 10 11 are closed on the staple and the tool rocked on the end of either jaw the leverage thus afforded will draw the staple easily, it being understood that in this use of the implement the stretcher-bar 16 is removed therefrom.

On one of the handle-arms, which may be the arm 10^a, a tongue *p* is formed and projects therefrom at its inner side, said tongue being opposite to and adapted to freely enter a slot *r*, formed in the handle-arm 11^a. The tongue *p* is somewhat tapered, so that its upper and lower faces converge, and the slot *r* is similarly formed, the latter having such an increased width as compared with the tongue that sufficient space is afforded for the reception of the two limbs of a fence-staple *o* if the latter is caused to straddle the tongue.

It will be seen that if a staple that is bent out of shape by withdrawing it from a post is placed between the flat inner faces of the handle-arms 10^a 11^a, near the pivot-joint leaves of the latter, and the arms are closed upon said staple the latter will be flattened and all lateral bends removed from the staple-limbs.

To give it correct shape as to its loop, the flattened old staple is placed on the tongue *p* and forced into the slot *r*, the initial stage of which operation is shown in Fig. 5. After the handle-arms are completely closed the contact of the staple with the sides of the slot *r* and tongue *p* will render the staple *o* correct in form and adapted for use; and it will be observed that the straightening operation just described is greatly aided by the formation of a groove in each side of the tongue *p* and slot *r*, wherein the limbs of the staple are embedded, and thus prevented from lateral movement while undergoing pressure from the tool, the grooves mentioned being clearly shown in Fig. 6.

Having thus fully described my invention,

I claim as new and desire to secure by Letters Patent—

1. A fence-building tool, comprising two lapped and pivoted handle-arms, the said arms
5 having elongated jaws bent laterally and toward each other, the said jaws being longitudinally slotted below their bent ends, one of said bent members being longitudinally notched forming two like jaw-limbs spaced
10 apart and the other jaw member having a nose thereon adapted to enter the space between the said jaw-limbs, substantially as described.

2. A fence-building tool, comprising two
15 lapped and pivoted handle-arms, each arm having a jaw member inwardly bent at the free end, one member being notched and the other member furnished with a projecting nose which enters the notch when the jaws
20 are closed, both jaws being longitudinally slotted below their bent ends, a spring-pressed latch-dog for each jaw and slidable in a recess below the slot therein, a ratchet-toothed stretcher-bar longitudinally movable in the
25 jaw-slots and engaged by said latch-dogs, and a clamping-dog on one end of the stretcher-bar, substantially as described.

3. A fence-building tool, comprising two
30 lapped and pivoted handle-arms, the said arms having elongated jaws bent laterally and toward each other, the said jaws being provided with openings below their bent ends, one of said bent members being longitudi-

nally notched forming two like jaw-limbs spaced apart and the other jaw member having a nose thereon and shoulders formed at each side of the said nose, substantially as described. 35

4. A fence-building tool, comprising two lapped and pivoted handle-arms, each arm
40 having a jaw member inwardly bent at the free end, one member being notched and the other member having a projecting nose adapted to enter the notch when the jaws are closed, the said jaws being longitudinally slotted below
45 their bent ends, a ratchet-toothed stretcher-bar longitudinally movable in the jaw-slots, dogs for engaging said stretcher-bar, a clamping-dog on one end of the stretcher-bar, and means for locking the handle-arms together, 50 substantially as described.

5. In a fence-building tool, having two lapped and pivoted handle-arms, a staple-straightening device, comprising a tongue
55 projecting at the inner side from one handle-arm, said tongue being adapted to enter a slot formed in the other handle-arm and said tongue and slot each having grooves in opposed faces, adapted to receive the limbs of a staple to be straightened, when the handle-
60 arms are folded toward each other, substantially as described.

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Witnesses:

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